

# Rediscovery of *Asthenes wyatti azuay* (Chapman 1923) with notes on its plumage variation and taxonomy of the *Asthenes anthoides* superspecies

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The type of *Asthenes wyatti azuay*, the southern Ecuadorian form of the Streak-backed Castanero, remained unique for 75 years until 1992, when I secured seven specimens and compared these directly with the type specimen in the American Museum of Natural History (AMNH). Chapman (1923) considered the almost entirely rufous wings of *azuay* as evidence that its closest relatives to the north and south, *A. w. aequatorialis* and *A. w. graminicola*, did not intergrade but the variation in the new series bridges the gap between these two forms.

## Material and methods

The type-locality of *A. w. azuay* is Bestión, 10,100' (c. 3,100 m), prov. Azuay, southern Ecuador (Chapman 1923). In November 1992 I collected seven adult males at Bestión (03°27'S, 79°03'W), at 3,000–3,075 m, on Cerro Carboncillo in prov. Loja (03°34'S, 79°12'W), at 2,875 m, and on the Altiplano of Tarqui in prov. Azuay (03°22'S, 79°11'W), at 3,000 m.

The song of each individual was tape-recorded before collection. The specimens are deposited in Academy of Natural Sciences of Philadelphia (ANSP), Museo Ecuatoriano de Ciencias Naturales (MECN), and Zoological Museum, University of Copenhagen (ZMUC). I compared three representative specimens of this series with the type of *A. w. azuay* in AMNH, and with specimens of closely related taxa in AMNH, ZMUC, and MECN. I also compared spectrograms and oscillograms of the songs of several taxa in the *Asthenes anthoides* superspecies, and performed playback experiments in the field in order to determine if *azuay* responded to the songs of these forms.

## Results

### Variation in the series

The most striking feature of the type of *A. w. azuay* is its almost entirely rufous wings, separating it from all its closest relatives. It has a buff underside like Peruvian *A. w. graminicola*, from which it was diagnosed by having darker and wider streaks on the back, a deeper coloured chin-patch, slightly shorter wing and tail, longer bill, fourth rectrix blackish only on the inner border of the inner web, and wings brighter and more extensively rufous (Chapman 1923).

TABLE 1

Measurements (mean±SD, and range) of males of three forms of *Asthenes wyatti* and from one specimen between *A. w. azuay* and *A. w. aequatorialis*

Taxon	<i>aequatorialis</i>	intermediate	<i>azuay</i>	<i>graminicola</i>
Body mass (g)	21.5±1.9 19.6–23.4 n=2	20.4 n=1	20.6±1.1 19.1–22.4 n=6	—
Wing flat (mm)	68.2±1.3 66–70 n=5	67 n=1	67.0±2.1 65–71 n=7	71.5±0.5 71–72 n=4
Tail (mm)	74.0±2.3 71–77 n=5	72 n=1	71.4±3.1 67–76 n=7	81.5±1.5 80–84 n=4
Culmen to skull (mm)	18.6±0.5 17.7–19.2 n=5	18.8 n=1	18.8±0.4 18.0–19.3 n=6	16.6±1.0 15.7–18.0 n=4

The new material of *A. w. azuay* demonstrates great variation in all these features. The only consistent difference in colour from Peruvian *A. w. graminicola* is the somewhat more rufous wings of *azuay*, but in this respect the type is extreme. All the others show less rufous, and some are barely different from *graminicola*. The series of *A. w. azuay* also appears much more similar to *A. w. aequatorialis* than does the type alone, and the northernmost specimen of *azuay* approaches *aequatorialis* in two characters. It has an almost wholly dark 4th rectrix with rufous only as a wedge along the shaft at the base of the inner web, and has the underside as pale as *A. w. aequatorialis*, the belly being deeper buffy grey in the rest of the series of *A. w. azuay* (including the type). Mensurally, the northernmost specimen of *A. w. azuay* does not differ from the rest of the series (Table 1).

In the new series of *A. w. azuay* the streaks on the back, although perhaps slightly darker, are no wider than on two specimens of *A. w. graminicola* from Junín and Cusco in Peru (ZMUC), but are wider than two other specimens from Junín (AMNH). The chin patch of *A. w. azuay* varies from white to rufous, and the colour is not correlated with age by skull ossification. Similar variation has been described for Venezuelan *A. w. mucuchiesi* (Phelps & Gilliard 1941).

In all seven recent specimens of *A. w. azuay* the two outer rectrices are wholly rufous. In five the third rectrix is similar, while this feather has a dusky wash along the edge of the inner web in two specimens. The fourth rectrix shows variable amounts of dusky along the mid edge of the inner web, ranging from a faint, 1 mm wide mark, to over half of the web in six of the specimens, three of which also have a narrow but distinct dusky line along the apical 2–4 cm of the shaft on the outer web. The seventh specimen approaches *aequatorialis* in two characters, as described above.

There is much overlap in the colour of the tail, but *A. w. azuay* averages intermediate between *A. w. aequatorialis* and the three central Peruvian specimens of *A. w. graminicola* in the amount of rufous on the 4th rectrix.

In both wing and tail colouration *A. w. aequatorialis* resembles Colombian *A. w. wyatti* and *A. w. sanctaemartae*, whereas Venezuelan *A. w. mucucliesi* differs by having broad dusky edges on the basal halves of the inner webs of the three outer rectrices (Phelps & Gilliard 1941).

The only significant difference in measurements between *A. w. aequatorialis*, *A. w. azuay* and *A. w. graminicola* (Table 1) is the longer tail of *graminicola* (t-test,  $p < 0.10$ ).

### Distribution

No specimen has been obtained from the two populations of *Asthenes wyatti* geographically closest to the range of *azuay*, one found 30 km to the north-northwest, on the Cajas plateau west of Cuenca, prov. Azuay (pers. obs.), the other some 175 km to the south, at Cruz Blanca, depto. Piura in the western Andes of northern Peru (Parker *et al.* 1986). There is a large gap in the known range of the species between central and northernmost Peru, but this gap may be filled in future surveys. The species is easily overlooked, but its presence, in its rather species-poor dry grassland habitat, is betrayed by its song. However, it appears to be genuinely absent from Ecuador south of Río Zamora (pers. obs.).

### Vocalizations

Playback experiments of songs of *A. w. graminicola*, *A. w. cuchacanchae* and *A. anthoides* all produced a marked response from both *A. w. azuay* and *A. w. aequatorialis*.

Songs of *aequatorialis* ( $n=3$ ), *azuay* ( $n=7$ ), *graminicola* ( $n=2$ ), *cuchacanchae* ( $n=2$ ), and *anthoides* ( $n=1$ ) were analysed (B. Whitney and own recordings). Their songs, a single trill repeated at intervals, are indistinguishable, except for that of *anthoides*, which differs by not having the notes accelerated towards the end of the trill. Call notes of *A. w. aequatorialis*, *A. w. azuay* and *A. w. cuchacanchae* are also indistinguishable (call notes of *A. anthoides* were not available for this study).

### Taxonomy

The taxonomic ranking of the twelve members of the *Asthenes anthoides* superspecies has differed considerably among authors (see discussion in Collar *et al.* 1992 and Vuilleumier 1997). I follow most authors in ranking *anthoides* as a distinct species, Austral Castanero, because of its noticeably different plumage and isolated range. The characters distinguishing the remaining taxa vary independently. The change from buffy to whitish underparts occurs between *A. w. azuay* and *A. w. aequatorialis*, whereas the northernmost form with a long tail is *A. w. graminicola*. Ridgely & Tudor (1994) allocated the eleven northern taxa to two species: Cordoba Castanero

*Asthenes sclateri* (with *lilloi*, *cuchacanchae* and *pinensis*), and *Asthenes wyatti* (with *graminicola*, *azuay*, *aequatorialis*, *sanctaemartae*, *perijana* (Phelps 1977), and *mucuchiesi*, using the distinct change in tail pattern between *pinensis* and *graminicola* as justification for ranking them as different species. However, as pointed out by Fjelds  & Krabbe (1990) and Vuilleumier (1997), birds from the Titicaca basin are variously intermediate between *pinensis* and *graminicola*. Vuilleumier (1997) treated *anthoides* and *sclateri* as two monotypic species, referring all other forms to *A. wyatti*. Without recordings of the song of *sclateri* I cannot disagree with Vuilleumier's (1997) suggested taxonomy, but suspect that the morphologically poorly differentiated form *sclateri* is best ranked as a subspecies of *Asthenes wyatti*.

## Discussion

### Habitat

In southern Ecuador *A. w. azuay* is found in a semi-humid habitat on black soils with a mosaic of mature tussock grass and "chapparal" i.e. dense vegetation of a variety of bushes, small trees and ferns. In northern Ecuador *A. w. aequatorialis* is found in mature, dry, 0.5 m tall tussock grass on dry, sandy soils (often at very high elevations), with scattered bushes, cacti, or outstanding rocks that are used as song posts. It is known from the slopes of Volc n Cotopaxi (ZMUC) and from Volc n Chimborazo including the ridge both northwards to Volc n Iliniza and southwards to Cechce (AMNH, BMNH, MECN, and my own tape-recordings). Birds on the Cajas plateau, Azuay Province, occur in similar habitat (pers. obs) and probably belong here.

In Peru and Bolivia *A. w. graminicola*, *A. w. pinensis* and *A. w. cuchacanchae* occur mainly in dry grassland like *A. w. aequatorialis* (pers. obs.) but once, near Sandia in Puno, I found *A. w. graminicola* in bushy vegetation (like *A. w. azuay*), which also seems to be the habitat used by Venezuelan *A. w. mucuchiesi* (Vuilleumier and Ewert 1978), and *A. anthoides* of Patagonia (Vuilleumier 1997). Also, *graminicola-pinensis* intergrades were found to nest in rather dispersed *Polylepis* woodland with tall grass (a nest found in a *Polylepis* tree) near Lampa, in the Titicaca basin in 1987 (J. Fjelds  pers. comm.).

### Speciation

The local distribution of their habitats, especially in the northern Andes, renders the different forms of *Asthenes wyatti* prone to differentiation. None of them is very distinct, however, probably owing to a fairly recent evolutionary history as well as to a high dispersal ability, as suggested by the species' presence in the isolated Santa Marta massif in northern Colombia.

Undiscovered populations may yet exist. An interesting, seemingly adult specimen in ZMUC (uncatalogued) labelled "Ecuador", presumably collected near Quito, differs from typical *A. w. aequatorialis* by having a darker and more extensive rufous in the wing, though not quite as much as in *A. w. azuay*, and from all other populations

by having narrow dusky brown streaks on the breast sides, sides, flanks and larger under tail-coverts. Another (AMNH 523763) labelled "Quito, Ecuador", also has distinctly more rufous in the wing than specimens from Cotopaxi and Chimborazo, and is paler above, but barely shows any streaks below.

In Ecuador both subspecies of *Asthenes wyatti* are replaced in tall, humid bunch grass by the Many-striped Castanero *Asthenes flammulata* (pers. obs.).

### Conservation

Unlike *A. w. aequatorialis*, which has large populations in national parks, *A. w. azuay* is not known to occur in any protected area. Much of its "chapparal" habitat has been recently cleared but as it lives at high density, a sizeable population persists.

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### References:

- Chapman, F. M. 1923. Description of proposed new Formicariidae and Dendro-colaptidae. *Amer. Mus. Novit.* 86: 1–20.
- Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. G., Parker III, T. A. & Wege, D. C. 1992. *Threatened birds of the Americas*. International Council for Bird Preservation, Cambridge.
- Fjeldså, J. & Krabbe, N. 1990. *Birds of the high Andes*. Zoologisk Museum, University of Copenhagen; and Svendborg, Denmark, Apollo Books, Copenhagen.
- Phelps, W. H., Jr. 1977. Una nueva especie y dos nuevas subspecies de aves (Psittacidae, Furnariidae) de la Sierra de Perijá cerca de la divisoria Colombo-Venezolana. *Bol. Soc. Venezolana Cienc. Nat.* 33: 43–53.
- Phelps, W. H. & Gilliard, E. T. 1941. Seventeen new birds from Venezuela. *Amer. Mus. Novit.* 1153: 1–17.
- Ridgely, R. S. & Tudor, G. 1994. *The birds of South America*. Vol. II. Univ. of Texas Press, Austin.
- Vuilleumier, F. 1997. Status and distribution of *Asthenes anthoides* (Furnariidae), a species endemic to Fuego-Patagonia, with notes on its systematic relationships and conservation. *Orn. Monogr.* 48: 791–808.
- Vuilleumier, F. & Ewert, D. N. 1978. The distribution of birds in Venezuelan páramos. *Bull. Amer. Mus. Nat. Hist.* 162: 49–90.

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